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THE BOSTON

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THE NEXT ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY WILL BE HELD IN BOSTON, TUESDAY, MAY 31, AND WEDNESDAY, JUNE 1, 1921.

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Miscellany.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS, SEPTEMBER, 1920.

GENERAL PREVALENCE.

There were 3,987 cases of communicable diseases reported to the State Department of Health during the month, a slight increase over the August total of 3,971.

Anterior Poliomyelitis. To September first there had been a total of 125 cases with 34 deaths, giving a fatality of over 25%. During September the epidemic increased steadily week by week as follows:

September 1 to 4	31
Week ending September 11	53
Week ending September 18	66
Week ending September 25	68
September 25 to 30	56
TOTAL	274

To September first the epidemic has occurred practically during the same period as in 1916 and has increased in the same steady proportion, with, however, only about one-third as many cases as in that year.

Possibly, with the epidemic in mind, the milder cases will be recognized and counted and it is hoped that the fatality rate for the whole epidemic will be less than 25%.

Diphtheria.—Four hundred and fifteen cases for the month compared with 530 for September last year, and 428 for August, 1920. In the past years there has generally been a slight increase for September over August. This increase was especially to have been expected this year, since the summer incidence and mortality in 1920 have been the highest since 1917. That it did not materialize may possibly have been due in part to the more general avoidance of crowd exposure of young children due to fear of infantile paralysis.

Epidemic Cerebrospinal Meningitis.—Twenty-four cases were reported. While a very small number, this was just twice the July incidence. This diagnosis is rarely corroborated by microscopic examination of the spinal fluid, and some of the District Health Officers are of the opinion that some infantile paralysis is included in this small figure.

Measles.—Only 207 cases were reported. Here, too, instead of the increase commonly seen there was a decrease from August.

Lobar Pneumonia.—An increase from 73 for August to 122 for September. This corresponds almost exactly with last year's increase from 72 to 142. It calls to mind also the extraordinary increase in 1918 from 171 in August to 3,114 in September when influenza pneumonia was prevalent.

Scarlet Fever increased from 213 to 288.

Pulmonary Tuberculosis totaled 606 cases for the month.

Typhoid Fever.—There was a decided increase for September, 1920, over the same month last year: 198 cases against 145. This increase is almost accounted for by epidemics in Fall River and Ipswich, giving increases in these places of 28 and 15 cases, respectively.

Whooping Cough—Five hundred and twenty-nine cases were reported in September, this year, and 349 in September, 1919.

Gonorrhea.—It is noted that in Boston for the past three months gonorrhea has exceeded any other reported communicable disease. This indicates fine reporting of this disease for Boston and, perhaps, gives some idea of the relative incidence of this disease where the facts are known and reported. It is also, perhaps, true that patients from nearby places prefer to come into Boston for treatment and thereby increase the Boston totals.

(Continued on page vi.)

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(Continued from page iv.)

RARE DISEASES.

Anterior Poliomyelitis was reported from Arlington, 1; Ashurnham, 1; Beverly, 5; Boston, 94; Bourne, 1; Braintree, 3; Brockton, 6; Brookline, 5; Cambridge, 9; Chelsea, 7; Concord, 1; Danvers, 1; Dedham; 1; Everett, 2; Fall River, 1; Framingham, 7; Grafton, 1; Hanover, 1; Haverhill, 3; Holliston, 3; Hudson, 1; Hull, 1; Lexington, 2; Lowell 3; Lynn, 17; Malden, 5; Manchester, 1; Marblehead, 1; Medford, 3; Melrose, 1; Methuen, 1; Milton, 3; Montague, 1; Nahant, 1; Natick, 3; Needham, 2; Newton, 7; Northampton, 1; Norwell, 2; Norwood, 1; Peabody, 2; Pittsfield, 1; Quincy, 3; Reading, 3; Revere, 4; Rockland, 1; Salem, 3; Sharon, 1; Somerville, 9; Southboro, 3; Springfield, 1; Stoneham, 2; Taunton, 2; Wakefield, 1; Waltham, 10; Weymouth, 12; Wilmington, 1; Winchester, 1; Winthrop, 2; Worcester, 2; total, 274.

Anthrax was reported by Lowell, 1; Peabody, 2; total, 3.

Dog-bite requiring anti-rabic treatment was reported by Fall River, 1; Holyoke, 1; Lowell, 1; Middleboro, 3; New Bedford, 1; Winthrop, 1; total, 8.

Dysentery was reported by Adams, 3; Boston, 1; Haverhill, 1; Quincy, 1; total 6.

Epidemic Cerebrospinal Meningitis was reported by Boston, 6; Fall River, 1; Haverhill, 1; Lawrence, 1; Lowell, 1; Lynn, 2; Maynard, 1; Pittsfield, 2; Quincy, 2; Salem, 1; Somerville, 1; Waltham, 1; Ware, 1; Watertown, 1; Weymouth, 1; Worcester, 1; total, 24.

Malaria was reported by Boston, 2; Dedham, 2; Fitchburg, 1; Northbridge, 1; Norwood, 2; total, 8.

Pellagra was reported by Wrentham, 1.

Septic Sore Throat was reported by Boston, 1; Fall River, 1; total, 2.

Tetanus was reported by Easthampton, 1; Fall River, 1; total 2.

Trachoma was reported by Boston, 3; Easton, 1; Fall River, 1; Peabody, 2; total, 7.

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Applications should be properly executed, excluding the medical certificate, and must be filed with the Civil Service Commission, Washington, D. C., with the material required, prior to the hour of closing business on November 30, 1920.

Applicants entitled to preference should attach to their applications their original discharge, or a photostat or certified copy thereof, or their official record of service, which will be returned after inspection by the Commission.

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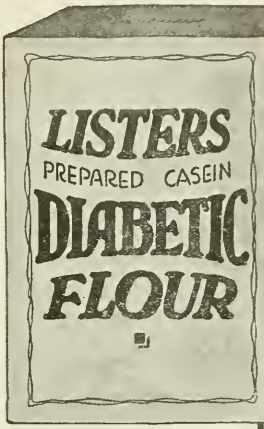

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Boston M. & S. J. 11-25-20

Clinical observations on the action of yeast in cases of acne

SEVENTEEN cases of acne vulgaris and eight cases of acne rosacea yielded to yeast treatment prescribed in recent clinical tests at the Philadelphia General Hospital, Roosevelt Hospital in New York, and Jefferson Medical College.

Every case showed improvement or cure. The acne vulgaris cases required from one week to two months, the acne rosacea from a few days to four weeks.

In one instance acne vulgaris had been present for nearly two years and deep-seated papules and pustules covered the entire face. Treatment given had resulted in only moderate improvement. One cake of Fleischmann's Yeast, t. i. d., added to the treatment resulted in almost entire drying up of lesions at the end of two weeks, and at the end of four weeks there were no active lesions.

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The conclusion of the associated physicians and scientists who carried on these tests is that compressed yeast is fully as successful as any other remedy in acne vulgaris and acne rosacea. (Journal A.M.A., Vol. LXIX, No. 15.)

This finding is in agreement with the experience of many physicians and with a large body of published evidence. Interesting observations on the value of yeast in cases of acne are found in the text-books of Walsh (1913), Sibley (1916), Gougerot (1917), and Darier (1918).

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Parke, Davis & Company

The Boston Medical and Surgical Journal

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The Massachusetts Medical Society.

MEETING OF THE SECTION OF HOSPITAL ADMINISTRATION, JUNE 9, 1920

WHAT SHOULD BE THE ATTITUDE OF THE STATE TOWARD HOSPITAL STANDARDIZATION?

BY MICHAEL F. FALLON, M.D., WORCESTER, MASS.,
Member Massachusetts Board of Registration in Medicine.

DR. OSLER, in an address, "The Hospital as a College," in 1903, said: "In the last quarter of the last century, the improvement in the teaching of medicine has been in three directions: in demanding of the student a better general education; in lengthening the period of professional study; and in substituting laboratories for lecture rooms, that is to say, in the replacement of theoretical by practical teaching. The problem before us as teachers may be very briefly stated: to give to our students an education of such a character that they can become sensible practitioners—the destiny of seven-eighths of them."[1]

So spake the master, Dr. Osler, in summing up the improvements in the teaching of the science and art of medicine during the last quarter of the last century. And now, as the first quarter of the present century is nearing its close, we may look for an improvement in the practice of medicine on exactly these same lines.

Medical educators in this country are at present quite unanimous in the opinion that it is necessary to lengthen the period of professional study by adding one year to the medical curriculum, and that this year should be a year of practical study.

The Federation of the State Medical License Boards of the United States, one of whose functions is the study of ways and means whereby the physician may better serve the people, after due deliberation, on March 3, 1920, unanimously passed the following resolution:

"The Federation of State Medical Boards of the United States reaffirms its recommendation that all graduates in medicine applying for admission to State Board examinations shall have had prior to any such examination at least one year of interneship.

"And it is further recommended that such interneship be taken in a hospital which is organized on the basis of including medical, surgical, obstetrical and laboratory departments, including pathologic, clinical and x-ray units."[2a]

The hospital interne year has already been adopted as an essential qualification for license to practice in ten states.[3] And also, eight medi-

cal schools have already adopted the requirement of an interne year for the degree of M.D.[2b]

Massachusetts should have stronger medical educational safeguards than she now has, since "applicants are floating to states, Massachusetts for example, in which adequate medical safeguards have not been provided,"[4b] and, "in 1918, Massachusetts had an increase in the number of registrations regardless of the general decrease in the majority of states.

Massachusetts was one af the states which also, in 1919, showed an increase beyond what would be expected by the general increase. Since Massachusetts does not have reciprocal relations with other states, this increase is apparently due to the faulty medical practice act in that state, where the board is not given authority to refuse recognition to low grade medical colleges, and cannot insist on reasonable standards of preliminary education."[4a]

"Ill fares the land, to hastenings ills a prey,
Where quacks accumulate, and men decay."

"In Massachusetts, there are one hundred and twelve hospitals with a total number of ten thousand three hundred and twenty-one beds, and a yearly number of one hundred seventy-nine thousand, six hundred and forty-seven patients."[5]

Perhaps no man can speak more authoritatively on hospitals in this community than Dr. John T. Bottomley. He says, "Direction, not destruction, is our aim, and it is our bounden duty to see that the public faith and the public trust are properly and honestly directed. We should no longer stand silently by and see them betrayed and violated as they have been and are being most shamefully betrayed and violated by many men of our profession who have used, or rather, misused the names "physician" and "hospital" to lure unsuspecting patients into institutions and establishments where dangerous and often fatal inefficiency prevails. Appeals to professional honor and conscience, and efforts to influence the hospital management are entirely useless in such instances. We must educate the public to recognize such physicians and such institutions, and to shun them as they deserve to be shunned."[6]

Dr. Edward Martin of Philadelphia testifies to the good results of the fifth, or interneship year as a requirement for state licenses. He says, "Now, when a man graduates from a medical school, he is only 20 per cent. efficient to his community. But when, in addition, he is trained in a good hospital, he is competent. A teaching hospital means to the community 80 per cent. efficiency of such a man. . . . . In Pennsylvania, we do not allow a man to practise medicine until he has completed one year's interneship in a hospital. I hope that such a requirement will soon exist in every state in the Union.

"Why do we want men 20 per cent. fit when we can have them 100 per cent. fit? Now, Dr. Baldy's idea is that the function of a state board is to protect a community by requiring sound training of its medical practitioners."[7]

One of the best authorities on medical education in the United States is Dr. A. D. Bevan, President of the American Medican Association, and father of the Council on Medical Education. He says:

"Without question, we must provide a year of training in a hospital for medical students before they begin to do independent practice.

"In Rush Medical College, 98 per cent. of the men for many years have had the intern year training before they began to practice. That is true in our better schools, but it ought to be made compulsory throughout the entire United States. I think that state licensing boards for the protection of the public, should make the intern year a requirement, or before a man passes his examination for licensure."[8]

Hence, any measure that seeks the health-betterment of the community is a matter of concern to the State License Board, and since this proposed obligatory fifth or hospital year for the medical student promises to be a valuable asset in conserving and promoting the health of the people, it is worthy of our serious study.

This proposed measure of a required fifth interneship year does not at all mean the control of all hospitals by the state, but it does mean that certain hospitals which are fit may be selected for teaching of medical students. The selection of such hospitals will be based on merit; and all hospitals may strive to fit themselves for teaching responsibilities.

How, then, will such a hospital interne year affect hospital standardization? It, perhaps, will compel a higher degree of efficiency in hospitals than any other agency would; and it will accomplish this by encouraging the staff members to fit themselves as teachers.

What conduces mostly to the welfare of the patient—the goal of all hospitals? Is it the palatial buildings, or the material adjuncts such as elaborate operating rooms? No! The efficiency of our hospital work in the shack buildings during our late war answers this. Brains, not bricks, make the hospital. The man rather than the material. And, in judging the efficiency of the hospital, the moral and educational standing of the member of the staff should be the first consideration. Let us not forget the remarkable research work made by such men as Koch, Pasteur, and our own Trudeau with, at times, a paucity of material at their command. I sometimes think that there may be danger to a hospital, as to a man, of becoming surfeited with wealth.

Perhaps the most successful hospital in this country, St. Mary's Hospital, in Rochester, Minnesota, had a staff of a few doctors, the Doctors Mayo,—father and sons,—far from wealthy, "devoted to science, living for investigation, and caring nothing for the lust of the eyes, and the pride of life,"[9] together with a nurses' staff of Sister-nurses.

The devotion of the members of a hospital staff to humanity and science; the subordination of science to the welfare of the patient; the ethical judgment in not regarding a human being as an animated test tube; a proper preparation for their various specialties; the ability and the desire "to teach the young all that they themselves had been taught, with all that their own experience had added," all of these are essentials in the standardization of a hospital. And the state, in protecting the health of the citizens, may select hospitals with such staffs for the training of the young doctor. But the state, in its selection of approved or teaching hospitals, should not be the harsh master, but rather the encouraging counsellor. Nor, should the classification of hospitals be on the cold, statistical A, B, and C plan.

Dr. Baldy, chairman of the State Board of Licensure of Pennsylvania, said concerning the new method of classification in that state:

"The classification is on an entirely new basis, and many of the hospitals that were on the list will be found missing. We have felt in Pennsylvania, and the hospitals have impressed upon us the fact, that the classification into A, B and C is not fair for such institutions. We now classify hospitals on the basis that an approved hospital must make provision for medicine, medical specialties; surgery, surgical specialties; obstetrics, laboratory and anesthetic department specialties, and so forth."[2c]

Classification may be explained on the basis of full credit for a normal general hospital—and yet, limited credit to the hospital that may deserve it; and thus the state will encourage hospitals to fit themselves for the receiving of internes. The status of the interne will be different from what it is at present. The present status of the interne is frequently chaotic. Under the proposed system, the interne will still be a student, and under the supervision of the medical school authorities. And again, the quality of his interneship will determine the granting of his state license. Such a status of the interne will be a Utopia for the hospital and all connected with it, and the profit accruing to the interne himself under authoritative guidance will be immeasurably greater than it is at present.

Dr. E. P. Lyon, Dean of the Medical School, University of Minnesota, says, "When you consider how much the medical school fifth year requirement would do for the hospitals in keeping the interne on the job, maintaining his scholarly attitude, etc. (inasmuch as his M.D. degree would depend on good work in the interne year)—when you consider these matters, you surgeons should recognize how great is your duty to bring proper conditions as regards interne training into your hospitals. Nor is this duty wholly altruistic, for you all know how much the success of your work depends on the intelligence, training, interest, faithfulness and hard work of the interne."[10]

The objection may be made that the addition of the proposed fifth or hospital year may lengthen an already long curriculum. But since 90 per cent. of all graduates already voluntarily serve a fifth or hospital year, the new requirement will impose no hardship on the student.[2d]

We cannot shorten our medical course, but we may shorten our premedical course. Probably the ideal premedical preparation, if the boy could be started early enough, would be a college education with due recognition of both the classics and sciences.

Concerning the value of such training, witness the experiences of Doctors William Mayo, President, and Franklin H. Martin, Secretary-General of the American College of Surgeons, who recently, as representatives of the American College of Surgeons, visited most of the

countries of South America. They met and interviewed some of the leading surgeons, and inspected the hospitals.

Dr. Martin says, "Dr. Marcelino Herrera Vegas, who is easily the dean of surgery of the southern continent, is a man whom it is an exceptional honor to know. . . . . We, in rapid-fire America must seem crude and immature in comparison with the associates of this man who reads his classics, and who has gained for himself a knowledge of the best of the ages. . . . . We must lay aside our provincial airs, and our cock-suredness, and be willing to broaden out as they have done, learn their language as they have learned ours. . . . .

"After visiting a few of these wonderful countries, the United States grows smaller in one's estimation, and the only way we can keep it big is to be willing to broaden out as citizens. . . . . Remember that they have hospitals which are equal to our best, and most of them are much more attractive. . . . . Remember that you are associating with a man from a country where a classical education is the prerequisite of a gentleman."[11]

Such testimony as to the pre-requisites for a medical education is timely, and it is appropriate to the subject of this essay since, as Dr. E. P. Lyon has well said, "The first and fundamental change required, before hospitals can be standardized, is a recognition on the part of the staff of their educational responsibilities."

But since the ideal premedical preparation may not always be practical in "rapid-fire America," the course could be shortened by modifying the grammar and high school courses so that a boy could be premedically prepared to enter the medical school at an age when he is a year or two older than the age at which he now enters college.

I have often thought that in arranging the premedical and even the medical studies, the medical school authorities and the members of the State license boards might with profit consult the general practitioners. They are in the majority—seven eighths—of the medical graduates. They are the "noblest Romans of them all." "The family doctor, the essential factor in the battle—humanly speaking, with him are the issues of life and death, since upon him falls the grievous responsibility in those terrible emergencies which bring darkness and despair to so many households."[12]

What should be the state's attitude on hospital standardization with reference to the specialties? The future has in store marked changes in the status of the specialist, and it will come to pass that recognition of a specialist will be given to him who has served a proper apprenticeship.

"The Mayo Foundation for Research" is preparing specialists in a proper way. So are our medical schools although perhaps not as systematically.

Dr. William Mayo's comment on the graduate's or specialist's preparation in South America indicates what will be the future status of the specialties in our country. He says, "Their medical schools are splendid institutions with a seven-year course, and are equal in equipment and methods of theoretic teaching to any in the world. In South America, "Commencement Day" means just that, for after graduating, the young surgeon begins a special course for surgical training. Instead of carving his way to knowledge and experience by the scalpel, he is tutored for a period of from eight to ten years along lines which we of the United States have accepted only recently under the general term of fellowships in graduate medicine and surgery."[13]

SUMMARY.

Medical educators and the Medical State License Boards of the United States recommend that a fifth year be added to the medical course; that this year be a practical or hospital year; and that it be a requirement for the state license.

This fifth or interne year is already voluntarily served by 90 per cent. of medical graduates; but under the proposed method, this year will be under authoritative, educational supervision.

In those states, notably Pennsylvania, in which this educational, fifth, or interne year has been adopted, hospital authorities are stimulated to attain to high standards, since they strive to be among the approved hospitals, and to be considered fit to receive and educate medical students.

Since a proper guidance of all the factors that make a hospital—the nurses, the laboratories and all hospital technicians—can come only from a rightly educated staff; and since the proposed educational interne year will stimulate the members of the hospital staffs to

attain to the highest standards, the adoption of this educational intern year is worthy of the serious consideration of the physicians and people of Massachusetts.

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[9] Osler, Teacher and Student, Aequanimitas, p. 29.
[10] Bulletin American College of Surgeons, Vol. iii, No. 1, p. 49.
[11] Surgery, Gynecology, and Obstetrics, May, 1920.
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DISCUSSION.

DR. W. P. BOWERS, Clinton: The keynote of this paper is the addition of a fifth year of interneship to the regular medical course in order to raise the standard of hospital administration. That, under the recommendation of the paper, is to be brought about by the amendment of the present state law so that Massachusetts can follow the plan that has been adopted in many other states of requiring as a prerequisite to registration an education which comprises the fifth, or interne year. That, under present conditions, is not practicable in Massachusetts, I am sorry to say.

Massachusetts has what is known as the "single standard." By that is meant that all candidates for licensure in Massachusetts simply have to be graduates of a medical institution which gives a four years' course and nothing more. That is, a person who has fulfilled this requirement is eligible for examination, and if he passes, he is registered. As you know, this matter has been very carefully studied by the Committee on Medical Education of your Society, and after repeated attempts to have the law amended to make it stronger, this committee of your Society again took up the matter last winter and formulated a bill to be presented to the Legislature which should require that all applicants should have a preliminary educational course of at least two years equal to that of a college of liberal arts.

It was deemed unwise to attempt the addition of the year's interneship because a considerable proportion of the people who apply for registration in Massachusetts have not available the facilities of the interne year. For instance all osteopaths who have had a four years' course of instruction are eligible for examination. They are not eligible, however, for interne service in those hospitals which would be recognized as suitable for such training. Under these circumstances the law would have to be materially changed before it would be possible to require an interneship year as a prerequisite to an examination for licensure and it was therefore deemed best to start this other scheme at the other end of the line and require that every applicant for registration should have had a preliminary education.

The argument for that is that medicine is so complex and requires so much intellectual development to comprehend that every person who undertakes to study medicine should have had a course of two years equal to that given in a college of liberal arts in order to properly absorb the instruction given in a medical school. That would make it necessary for the College of Physicians and Surgeons and the Middlesex College to make their preliminary requirements for matriculation equivalent to the two years referred to.

So it seems to me that until you radically revise this law, not much progress can be made and I would like to state at this time that it is no easy matter to secure a revision of laws relating to medical practice in Massachusetts. It is interesting to note that the influence of one lone woman defeated the efforts of your committees on medical education and legislation cooperating with a committee of forty physicians, to make the legislators see the value of a premedical education. This woman is in the College of Physicians and Surgeons and she told the legislators that the purpose of the bill would deprive her of the privilege of coming up for registration after graduation, and the chivalry of your legislators was such that they opposed the passage of such legislation.

Now it seems to me that since this question of hospital standardization is before us it should be considered from another standpoint than the addition of the fifth interneship year, because you cannot consider all the hospitals in the state as educational institutions, that is, so far as interneships are concerned, and if you pass a law requiring applicants for registration to have had a year in a hospital as interne, that would not apply to a considerable number of our hospitals in the state which need standardization more than some of the larger and better institutions of this class.

The State of Massachusetts has adopted the policy of protecting its citizens where they are unable to protect themselves. The state has officials to watch over your foods and drugs; it sees that your measures are standardized, and in these ways it protects the people from the various frauds which are apt to enter into commercial life. It goes further. It tries to protect the people against the hazards of industry and accidents of various sorts. It helps protect the people from disease and injury but fails to

see the importance of elevating the standards of medical practice.

Now if there are grounds for the criticisms of hospitals that crop up from time to time, for instance the one that recently appeared in the press that certain irregularities exist in hospitals, if these things exist, they call for some standardization of hospitals as a direct state activity connected either with the Department of Public Health or through a reorganization of the Board of Registration in Medicine, and if you get a few more men like Dr. Fallon and Dr. Prior on that Board you will see some results. If you can have a reorganized Board made up of men competent to deal with this question of standardization and give them money enough, you can then bring the doubtful hospitals up to a good standard. I think that criticisms are directed more frequently to those hospitals which are founded with the very best of motives and for good purposes, but which in the course of their evolution, before they attain to the standing of these larger hospitals, are sometimes guilty of practices not up to higher standards.

It seems to me, in addition to this plan which has been suggested, and which is most valuable, but which according to the Massachusetts standards could not be put into effect at the present time, the institution of some regular, organized and efficient inspection of hospitals would be most useful in raising many hospitals to a higher standard.

DR. F. J. COTTON, Boston: There is one question I would like to ask which is only more or less germane to this matter. I wonder if we could have Dr. Fallon say something about this "legalized murder" thing which appeared in the press and which has had a bad effect on the internes. In this state we are holding internes in hospitals on the basis of giving them what they want, as far as we can. Necessarily a good deal of operating, mostly minor, has to be turned over to internes, but generally speaking, it is pretty carefully supervised. It is about the only chance they have under present conditions to do very much until they get out and work for themselves. I see no way of getting decent training to these men other than having them operate under instruction.

I am not criticising Dr. Fallon, but I would like a statement as to what he believes and not what the newspaper told us, because I know it has started up a good deal of feeling in my own hospital, and it is just as well not to have that feeling. Of course this is only a side issue, but I think it should be cleared up.

DR. C. E. MONGAN, Somerville: I was much interested in what Dr. Fallon said of shortening the time of premedical study so that the student course might be shorter in total number of years than it is at present, and in order that the student may become a practitioner earlier than is possible today.

All these questions are very complicated, and here is a further complication in this question in that it has an industrial bearing. There is one large organization in industry in this state which arbitrarily rejects applicants for work if the applicant is over forty-five years of age. That means in that organization which employs a number of highly skilled men that a man is industrially dead at forty-five. That means that the children of that class of men have not the same opportunity financially for entering medicine or any other profession, if their father, the earning part of the household, is cut off at that age. Now that is why the pre-medical education should be shortened. As Dr. Fallon says, you might shorten it in the grammar school, or cut out something in the high school. Youths go to Technology at eighteen years of age. Four or five years later, when they are twenty-two or twenty-three years old, they are fitted to take up their life work in highly specialized departments. The same thing can be done in medicine, and I think it ought to be done in justice to the children of those men whose limit of industry is put at forty-five, whose earning power ceases then. These questions are complicated. It is not simply the thing of saying you shall have so many years of medical study in the hospital, in the medical school, because you are brought up against conditions which sometimes make this impossible, so if we could rearrange our whole scheme, and if industrial work is to play the part in medicine that it is going to play, we will have to change our whole curriculum in medical education.

DR. FALLON, in closing: There was recently a convention of all the medical boards of New England at the State House. The speaker of the occasion was the Assistant District Attorney. A reporter was there. He reported the subject of the Assistant District Attorney's talk. The various delegates to this convention spoke afterwards. I supposed that the Attorney's talk would be reported, but I did not know that any member's talk would be reported. Had I known that, I would have corrected the newspaper reporter's version of my words.

I said, and Dr. Bowers will bear me out on this, that unwarranted surgery is being done in this State of Massachusetts; that if a man who is incompetent and unprepared does a major or any other operation with resulting death to the patient, that that is murder, and since the law protects the man, it is legalized murder. I still say so,—that if a man is unprepared and incompetent to do surgery, whether within the walls of the hospital, or outside, and if that patient dies, the man who did the operation has committed murder.

Several such cases have come to my knowl-

edge within the past winter. I know of one case where a man, a general practitioner who did not have special surgical training, took out the tonsils of a child, and the child died. This practitioner had no other doctor there. He handed the ether cone over to a bystander. The child died then and there. If that case had been reported to the Board of Registration in Medicine, something would have been done; but it was not reported.

I say that a young man, if he is going to specialize on eye, ear or throat, should have special training, and he should not attempt major operations on a human being until he has had proper preparation, anatomically and surgically, and I believe that a proper apprenticeship is what Doctor Mayo referred to when he said, "Commencement Day" means just that, for after graduating, the young surgeon begins a special course of surgical training." I think that if a man is going to do the specialties that it is necessary for him to study under masters, and I believe that he should not do major surgery until he has done post-graduate study for three years and perhaps more, and that he should not be given heavy major operations to do when he is still a medical student.

I repeat that internes should not have the mantle of protection thrown over them in doing major operations which they are not competent to do. They should wait until they are anatomically and surgically prepared, and also, after proper teaching. Let them do operations on dogs and cats, but not on human beings. We are looking for proper publicity in these matters for the protection of the public. I have a clipping here from a labor union paper of Massachusetts. After certain introductory remarks about the man who made the statement concerning the question of legalized murder, this paper says:

The remark was to the effect that "young men just out of college are professionally unfit to perform difficult operations, and that by permitting inexperienced surgeons to perform such operations, the State practically legalizes murder."

"This is a bold but most important statement, and it will make possible not only more rigid examinations, but the acquirement of more preliminary experience before a graduate is permitted to hang out his shingle." Now, the man who wrote this for this labor union paper, whoever he is, interpreted what I mean. He goes on to say, "A human life should not be the subject of an experiment for inexperienced and inefficient doctors, and, as Dr. Fallon says, our present system may make them such." That is the answer to that.

Some Practical Hospital Problems Encountered in an Industrial Community.

By E. MacD. Stanton, M.D., Schenectady, N. Y.

The hospital problems encountered in Schenectady are not different in kind from those of most other industrial communities of similar size. The means which we have adopted for solving these problems are by no means out of the ordinary. However, our problems have in them certain elements of special interest because in Schenectady several of the fundamental factors governing these problems are encountered in almost elementary simplicity. There are no complicating factors to cloud the situation. Therefore, it may prove of some interest to you for me to describe briefly our problems and how we have attempted to solve them and to indicate what I believe has been the effect not only upon the hospital but on the community as a whole and particularly upon the local medical profession.

We have all of us heard, I am sure, the oft repeated statement that modern scientific medical treatment entails an expensiveness far beyond the reach of the average man. We are told that the poor can receive hospital care as a charity, the rich may obtain it at exorbitant rates in their private rooms, but that, in many localities at least, provisions are quite inadequate for the self-respecting middle-class in moderate or meagre circumstances.

Our hospital problem in Schenectady is somewhat unique in that local conditions are such that practically our entire effort must be directed toward furnishing modern scientific medical, surgical and hospital care to people of the average financial status of wage earners and, furthermore, the financial resources of the community are such that these services must be paid for by these same wage earners and others of relatively similar financial resources. Most communities of the size of Schenectady contain a fair proportion of really wealthy peopeople, but with us wealth of the class which is usually called upon to support and endow hospitals is almost non-existant: The capital of our great industries is for the most part owned out of town and the philanthropists which it produces may support the hospitals of the cities in which they live but they do not support those of Schenectady. The poor we do have with us in average numbers. The vast majority of our populations is, however, com-

posed of the families of wage-earners and of salaried men and of tradespeople.

The influence of tradition is everywhere powerful and especially so in hospital work. Our hospital was started on the traditional concept of support by contributions and the idea that its chief function would be to do the largest possible amount of charity work. Little progress was made along these lines because these two concepts represented only the top and bottom fringes of the real problem as it exists in our community, which is the problem of furnishing adequate medical, surgical and hospital facilities to the middle class—90% or 95% of our population.

Through legacies, the donations of a few generous individuals and "campaigns," we have been able to raise the funds necessary for our buildings and equipment. By careful management and by the apportionment of charges according to the ability of our patients to pay we have found it possible to make the hospital almost self-supporting as far as the general running expenses are concerned.

Of course, economy of management has been absolutely necessary, but this has not meant that we have had to forego necessary equipment, or give sub-standard service as regards nursing, food or supplies.

In order to get maximum economy in running expenses it has been absolutely necessary to have the full coöperation of the attending physicians and surgeons. It is the easiest thing in the world for one surgeon to use twice or even three times the amount of dressings and surgical supplies that another surgeon will use on the same class of cases with no difference whatever in results. To a lesser extent, the same necessity for the economic coöperation on the part of attending men holds true in regard to diets and medicines.

The question of obtaining a maximum total gross income from the patients treated has been very largely a problem of keeping the charge for the pay ward and semi-private services down to a point where the patients themselves can pay in large part at least for the services rendered. The deficits arising from these services have been largely made up by charging slightly more than cost for the private room patients, but here, too, the charges must be kept well within the ability of those charged to pay.

The problem of the charity work of the hospital has been solved through the working of a number of interrelated forces. First among which I would place the general education of the public to the point of realizing that hospital charity is not the normal thing in the community and that while the hospital is always willing to meet the deserving sick part way, on the other hand the hospital and the community expects each family to meet its own obligations as far as possible. One of the chief factors in doing away with unnecessary hospital charity was the placing of the charity work of our city in the hands of the municipality rather than in the hands of private charity organizations. Formerly much of the charity work was undertaken by private charity organizations with the unavoidable consequence that these organizations were competing among themselves as to the amount of charity work which they did. The sending of charity patients to the hospital was always one of their favorite occupations, even though the organizations did not themselves contribute to the support of the hospital. Incidentally they spread throughout the entire community the belief that charity at the hospital and medical charity in general was the normal thing to expect.

Placing the charity work of the community on a municipal basis has had several effects which were not at first anticipated. First, it has done away with the competition between the different private organizations. Second, it has placed the costs of charity squarely up to the community. If wages and other conditions are such that a large amount of charity is necessary it is a community problem which must be paid for by the community. As a result the community sees to it that conditions are corrected. In other words, to a municipality the poor are a liability, whereas to private charity organizations they are liable to be assets.

In Schenectady all requests for hospital charity are referred to the city department of charities. This department has always been under most capable management and its motto has been to help the poor help themselves. The department pays ward rates for all cases treated in the hospital. The department maintains as its policy the idea that every sick patient shall have the care which is best calculated to place that patient or family on an independent basis as soon as possible. No deserving cases are neglected, but as a matter of fact under the workings of this plan the charity work of the

hospital has been reduced from an average of about 55% before the plan went into effect to less than 15% in 1919. Viewed as a community problem, the necessity for any considerable amount of medical charity indicates some fundamental social defect in that community. The real remedy can never be that of granting more charity. It is far better to search out and eliminate the causes which underly the excessive demand.

The medical profession is ever ready to do its share to help along the work of the dispensary and the ward, but society in general and the community in particular should always be impressed with the great truth that one of the most difficult things to accomplish in this world is to actually get something for nothing. This rule holds just as true in regard to medical charity as in anything else. One of the reasons why the fees of consultants are liable to be beyond the reach of the average man is the fact that these same consultants are compelled by their hospitals to give a large part of their time free. When a hospital requires its attending men to give say one half of their energies to charity work, a perfectly natural consequence is that the pay patients of these consultants will be compelled to pay at least twice normal fees for their services. Of course it is a good policy to compel the rich to pay for the services rendered the poor, but the medical profession should never lose sight of the fact that this policy carried a little too far is liable to lead to really serious social difficulties, not the least of which is the fact that the fees for pay cases must of necessity be raised to a point beyond the reach of the average family. This again increases the demand for free service and establishes what is in reality a vicious circle.

We have recently had under consideration a plan of hospital financing which embraces the insurance principle and which bids fair to assume real importance in our community. Several months ago a committee of the public school teachers' association came to the managers of the hospital with a request that they be allowed to furnish a room and also furnish a small sum each year toward its support. Investigation promptly brought out the fact that this donation had several strings attached to it and that the Teachers' Association would expect the hospital to render a considerable amount of service to the teachers free of charge. It occurred to one of us that the situation contained in it factors which might lend themselves readily to insurance methods of adjustment. The teachers in Schenectady, as elsewhere, are as a group rather poorly paid. Many of them are living in boarding houses where care is not easily obtained during illness. Also as a group they are inclined to have certain standards of pride which make it difficult for them to accept the cheaper ward and semi-private accommodations in the hospital. As an insurance proposition, however, they represent a fairly uniform risk group and actuarial calculations based on their sickness records for the past several years shows that if the Teachers' Association will collect one dollar per year from each teacher member and turn this sum over to the hospital, that in return the hospital can afford to allow any teacher requiring hospital care during the year a credit of eleven dollars per week on her hospital bill. This plan will make it possible for an insured teacher to be sick indefinitely in a two-bed room at a cost of $6.50 per week for her hospital care. The difference between $6.50 and $17.50 will make all the difference between a fairly easy burden and a real hardship to the sick teacher.

In many respects this plan is ideal from an insurance viewpoint. The common run of minor illnesses are automatically eliminated. The more severe illnesses requiring hospital care occur with sufficient infrequency to make them insurable risks. At the same time the plan of limiting the hospital benefit to a point well below its cost to the insured individual will automatically take care of any tendency to loss because of malingering. The actuarial data show that the hospital has received a sufficient margin of safety to warrant the expectation that the plan will be of real financial benefit to the hospital.

The teachers have unanimously accepted the plan. I am fully confident that if it proves a success with the teachers that ultimately it will spread to other groups such as the stenographers of our large works and possibly the labor unions and similar groups throughout the community.

In Schenectady, as elsewhere, the problem of so-called health insurance has been a very live one for several years. We are unanimously of the opinion that the attempt to cover the ordinary run of short-duration illnesses by the insurance method is bound to result in failure, or if forced by the mandate of the law, in ex-

treme hardships to the medical profession. However, we do not feel that the insurance principle as applied to the financing of the sickness problem is altogether bad. From both the social and actuarial viewpoints, the financial problem of the hard-hitting, long-duration diseases is one which should lend itself readily to solution by the insurance method. I cannot help but feel that the correct solution of this problem can come only when we realize that there is an uninsurable portion of the sickness problem and also an insurable portion. The laws so far proposed have been unfortunate in that they have specialized in the uninsurable portion of the problem and have almost entirely neglected the long duration illnesses which of themselves constitute the portion of the sickness problem which most readily lends itself to solution by the insurance method.

The question has undoubtedly occurred to some of you as to the support we receive from the great industrial corporations doing business in Schenectady. Donations for capital account such as buildings and improvements to plant have been given freely and have helped the hospital to their face value. However, as regards donations to cover running expenses, our experience has not been altogether satisfactory and I am sure that in this regard others must have encountered similar difficulties. Donations given by corporations are liable to have strings attached to them. I am firmly of the opinion that our experience would lead us to believe that the best way to collect funds from a manufacturing corporation for the support of a hospital is to see to it that the corporation pays for full value received for each of its patients treated in the hospital. This is nothing more nor less than a good fair business proposition which is not liable to have any strings or paternalistic schemes attached to it and it is the plan which will probably net the hospital the greatest income in the long run.

I have spent some time in describing the financial aspects of the hospital situation as it exists in Schenectady. There are three parties definitely effected by this situation—the hospital, the public and the medical profession.

To many accustomed to work in hospitals supported by large endowments and generous contributions it might seem that we must be compelled to work under a serious handicap. Formerly I was decidedly of this opinion but gradually I have been forced to come to the opinion that the situation as a whole should be viewed as an asset rather than a liability. We are able to purchase all really necessary equipment and supplies. It costs very little to keep accurate histories and records and it costs nothing at all to make use of these histories at our monthly clinical meetings. Our laboratory service is in every way adequate. It serves not only the hospital but the community, regardless of whether or not the patient may be an inmate of the hospital. This laboratory and the work done in the laboratory has recently been taken as a standard by the New York State Department of Health, which department is making a state-wide campaign to induce other hospitals to introduce similar laboratory facilities. Our x-ray department is well equipped and fully adequate to the needs of the hospital. In short I know of no work done in the hospital which is done poorly because of any excessive expense associated with modern scientific medicine.

As regards the community in general it may seem a little hard at times for some families to pay their hospital expenses, but the mere presence of these necessities has a definite effect upon the attitude of the public in regard to wage adjustments. Public sentiment is insistent that the general wage level in the community shall be such as to enable the wage-earning families to meet their ordinary obligations, including the costs of ordinary medical services. I have myself very little doubt but that a generously endowed hospital and the introduction of a considerable charity medical service would ultimately be reflected in a corresponding lowering of the general wage scale of the community. As regards the interests of the medical profession, I believe that our position is a peculiarly favorable one as compared with the situation that very frequently develops in the sphere of the heavily endowed hospital. Our hospital is an absolutely open one and it is an open hospital for the very simple reason that patients who pay for their care in the hospital demand that they be allowed to select their own physician or surgeon. In our hospital we do have a staff, appointed with all the formalities of staff appointments in any other hospital, but as a matter of fact the duties and actual service of this staff are merely nominal. The real staff of the hospital consists of the members of the County Medical Society, and the County Medi-

cal Society is actually represented on the board by three members elected by the society and known as the medical advisory committee. It is the duty of this committee to adjust all questions arising between the medical profession and the Board of Managers of the hospital. The committee is responsible to the County Medical Society and it is worthy of note that during the twelve years that this plan has been in operation all differences between the managers of the hospital and the medical profession have been readily adjusted to the entire satisfaction of the medical profession.

To those accustomed to closed hospitals and all the staff privileges and restrictions usually encountered in these hospitals, the idea of a wide-open hospital with the 110 members of the County Medical Society practically functioning as a staff, a picture of chaos and complications may come to mind. Undoubtedly there are some complications inherent in this arrangement, but as a matter of fact a study of our records shows that the loss of hospital efficiency due to these shortcomings is surprisingly small and I believe entirely overshadowed by the stimulating effect of the open hospital upon the general average of medical practice in the community.

DISCUSSION.

Dr. C. E. Mongan, Somerville: I wish to thank the chairman of this section for asking me to come here today and discuss this question, which I feel I am not fully equipped to do. If you will bear with me, I will do the best I can. I regret that Dr. Stanton has been summoned back to Schenectady by a serious railroad accident so that he is not here to explain some of the details he has mentioned in his paper. Like all medical questions, this question also is a complicated one. It does not concern hospitals alone, but concerns the whole medical practice. Your chairman, in opening, stated that we are now standing on the threshold and must decide whether or not we would start and right our own house or stand aside and have someone right it for us. I will go a little further than that. You cannot stand aside and let things take their course, but you must right them yourself. The practice of medicine no longer is the same as in the old days, when the physician remained in his office, named his diagnosis and prescribed for the patients, and when he visited the houses of his patients to attend them. Now-a-days the medical profession has other functions. There are social and economical aspects to the practice of medicine, as well as medical and surgical. There are other things which we as practitioners of medicine must consider. In this paper of Dr. Stanton's he shows us a typical American community, and he deals with this question in a typically American way. He does not go across the water to solve the question of medical and surgical practice in the United States. The condition of that community is typical of a great many other communities. The first point in Dr. Stanton's paper was the question of charity, and they seem to have worked it out very well in Schenectady by putting charity where it belongs. One great difficulty we have in smaller communities is that the community feels it owns the hospital if the hospital is a semi-public one because it has contributed something to its support, and that it can send all patients to it at all times, never thinking of who is going to pay the bill. There in Schenectady they have settled that question by putting charity where it belongs.

There is one other point of which Dr. Stanton did not speak in his paper, but which is coming up every day in our community, and that is, the voluntary societies who wish to take over in part the practice of medicine. In the past they have done very good charitable work, and having done good charitable work, they think they can do something to help on the practice of medicine. In my city they have started what they call clinics. These clinics take place in a schoolhouse or other place, where the people come to be examined and to have their children looked over. My contention is that a clinic belongs in a hospital, under the charge of a physician, where the case may be diagnosed and treatment given when indicated. It is not for any society to tell physicians how to take care of the community, and if they succeed in doing this, it is the fault of the community that they have surrendered their rights. I shall oppose personally any attempt to take away any of the functions of the medical profession, and it is a function of the profession to take care of the ill.

The speaker this morning in the Annual Discourse laid very careful stress upon the insurance part of the practice of medicine, and he laid great stress upon compensation and upon industrial medicine as it is practised in the United States. He came to the conclusion, and I agree with him, that the industrial work in the big factories is done not wholly on account of the humane benefit, but because it works to the advantage of the organization which employs doctors to take care of the sick and the injured. In a recent publication, Dr. Mock states, "It is figured that through one branch of medical work alone, after the entire medical cost was deducted, there accrued to the employer an annual profit of over a quarter of a million dollars through the examination of 118,000 patients." That is to say, after the industrial medical men had taken care of all these people, there accrued in one year to the industrial organization employing him a saving of

$250,000. That is a phase of industrial work that has probably never occurred to many in this room. Now it is not well perhaps for us to get down to the sordid or financial side of this question, but in discussing these questions in all their bearings it is just as well to keep in mind what Dr. Hugh Cabot said about the "human side of the thing." The bringing back to work as quickly as possible of sick or injured persons and the saving of the overhead expenses is the real reason for industrial work in factories today.

In another part of this paper, Dr. Stanton brought up a new idea, and that is whether you should have an open or a closed hospital. Heretofore I had been in favor of a closed hospital, especially in small communities. After hearing this paper, I don't know that I am so strongly in favor of a closed hospital. There surely is something to be said in favor of the open hospital. The law recognizes fundamentally the open hospital, when it says that the person who is injured under compensation law may choose his own physician. To my mind, that recognizes fundamentally an open hospital. Now I don't know, and I cannot say how an open hospital could exist in a large community like Boston, or in some of the larger cities in Massachusetts, but I do think that in a small community the open hospital plan could be worked out to great advantage, and then, if successful, the plan could be taken to the larger cities. The objection to the open hospital has frequently been that there might be five or six physicians coming in in the morning to make their visits,—that they might all come at one time, and the number of nurses would not be sufficient to attend each physician, or that one physician might come at nine o'clock and three or four at intervals during the morning and there would be no regular time for physicians' visits, and this condition would incur great expense and, some maintain, would not be workable. I think that could all be changed. I think the institution of the open hospital in the small community is something which would be appreciated and is something along constructive lines which has not been done before. As I said in opening, we must remember that we are no longer practicing medicine purely. We are concerned with the affairs of the state. We have come to a new era and we are going on in a new way, and it is up to the men here to give to the community something constructive.

I would like to tell you more of my experiences before legislative committees and commissions when from time to time I and others have appeared before them in connection with medical legislation. They always want to know what we have done for the community. Of course, our one reply has been that we have done so much in preventive medicine. The average legislator does not understand or comprehend what you mean by preventive medicine. He wants to know what you can do for the citizen when sickness comes upon him suddenly and when the citizen is unprepared financially to cope with sickness, and it is now time for us to present some definite constructive program that will not only suit the public, take good care of the sick, preserve the rights of the medical profession, and get rid of the objections and criticisms which are coming more frequently of late from half-baked philosophers with half-baked ideas.

How Can the Shortage of Nurses be Met?

By Joseph B. Howland, M.D., Boston.

Florence Nightingale, the founder of modern nursing, was born 100 years ago, and this year, when the centennial of her birth is being celebrated, we hear from all parts of the country that fewer women than formerly are entering the profession she did so much for.

We also learn that in some states there is a shortage of nurses for private nursing. During the war it was to be expected that fewer graduate nurses would be available for any other than war service but we should probably not have thought much about it if it had not been for the influenza epidemic. This past winter the same conditions prevailed for a short time. In Boston, at least, during the early winter and this spring, the registries have been able to supply the demand for nurses for private nursing. It is true that not to the same extent as formerly can the better educated and better trained nurses be obtained for private work, and this has caused much unfavorable comment by physicians.

We know that hospitals all over the country during the war took in many more than their normal number of pupils in an endeavor to meet the country's needs and it is fair to suppose that in doing so they drew on the supply of women who have entered later.

To just what extent this affects the present situation we can only guess, but it must be taken into account. That there are other important causes, all training school principals agree, and it is well known that the shortage of pupils was showing itself before the war.

Perhaps a brief review of the progress of nursing in this country may throw some light on the present situation. The first training school for nurses in the United States was established at the New England Hospital for Women and Children in Boston in 1872, and

in the following year training schools were opened in Bellevue Hospital, New York, at the New Haven Hospital, and at the Massachusetts General Hospital. Although at the beginning the hospital authorities were not without misgivings as to the success of the new venture, it did not take trustees, physicians, and the public long to see that a new profession of inestimable benefit had made its beginning in America. The trained nurse gradually replaced the untrained attendant who usually had little education, not much ambition to learn and who occasionally approximated in many respects the celebrated Sairy Gamp.

As trained nursing became better known, large numbers of well-educated women, who desired to be independent, entered training schools, as there are few other desirable fields in which they could earn their own living. Until nurse training became popular, unless they married or took up school teaching or music teaching, they continued to live at home. After completing a course of training a few became superintendents of training schools; the great majority, however, if they practised their profession must do institutional work or private nursing. The broad field in which nurses may work today had not been dreamed of. A most important step in the progress of nursing dates from 1893, at the time of the World's Fair in Chicago. At this time, at a meeting of the Hospital and Medical Congress, it was suggested that a sub-section of nursing be formed. This was done and Miss Isabel Hampton, Superintendent of Nurses of Johns Hopkins Hospital, was made chairman. As a result of this meeting a few days later a small group of training school superintendents, women who realized the incompleteness of their own training and who wished their pupils to benefit by their experience, met again and founded an association of training school superintendents which later became the National League of Nursing Education, an association which has done much for the advancement of nursing. Miss Sophia Palmer and Miss M. E. P. Davis, both graduates of the Massachusetts General Hospital Training School, were conspicuous members of this first gathering. Miss Palmer continued actively in educational work until her death this past winter.

About 20 years ago other opportunities than nursing began to attract educated women, such as library and secretarial work. During the past decade, social service, domestic science, medical gymnastics, and occupational therapy, have been added to the list. More recently many well-educated women may be found in commerce, holding important places in stores as teachers of salesmanship, window-dressers, decorators, and as store-guides.

Not a great many years ago when a young woman wished to become a nurse she wrote to a hospital applying for admission to the training school, and if accepted, saw for the first time on the day of her admission, the hospital that was to become her home for two or three years and which was to give her training for her career. It is not so today; candidates make long journeys to look over the hospitals they are considering and before they decide ask many searching questions in an endeavor to find out the strong and weak points of the rival schools they are to choose from. A great many hospitals conducting training schools still have too few paid instructors, too long hours, too much domestic work, unsuitable living quarters, and too little in amount of variety of clinical material to attract the kind of women we want to become nurses. Today we find some physicians advocating a return of the old standards of 20 years ago, as if such a backward step would again attract the same sort of women who then entered training. They do not seem to realize that conditions have changed. It is the school with the standards of 20 years ago that is crying loudest today for pupils, and as a rule only the more progressive schools have full classes. It must be admitted that not all schools are so fortunate, but in the main this is so. It is certain that the training school of the future will be less dependent on the hospital for its support.

Many hospitals have from their beginning had difficulty in raising money enough for their charitable work and their training schools have shared in this lack of funds. Some, in fact, have done so little that it is surprising that they have been able, year after year, to obtain students.

There is today a distinct tendency to separate more widely the theoretical work from the practical training in the hospital as evidenced by the so-called University Training Schools. Upon her return to England from the Crimean War, Florence Nightingale was given fifty thousand pounds by the grateful people of England. She accepted it only with the understanding that it was to be used to found a school of nursing which might train women along the

lines she advocated. The Nightingale School of Nursing which she established in connection with St. Thomas' Hospital in London, was the first endowed training school for nurses, and after all these years since its beginning, I know of no other on such a completely independent educational basis.

An important conference took place in New York last February at the instance of the Rockefeller Foundation. There were present educators, hospital trustees, superintendents of hospitals and training schools from all over the United States and Canada to consider the present nurse training situation, and its future. We may look forward with interest to the report of the committee appointed to study the subject. It seems to me safe to predict that there will be plenty of nurses for the important work they have to do when the public are fully awake to the necessary steps to make training again as comparatively attractive as it was some years ago.

We, as physicians, would do well to second the efforts of training school superintendents in their endeavor to make hospital trustees and superintendents see that their training schools have really educational courses; that casual, poorly prepared lectures by members of the staff are not an equivalent of well planned courses by paid instructors; that the large amount of domestic work, so often expected of nurses, is not educational, deprives her of time needed to properly care for her patients and may well make her question the wisdom of the choice of her calling.

Managers of special hospitals, such as surgical, obstetrical, mental, eye and ear, and children's hospitals should appreciate the fact that they cannot properly maintain training schools without ample affiliations to give their pupils the necessary all round training.

The field of public health nursing is expanding so rapidly that it seems almost impossible to meet the demand from this quarter altho many of our best nurses are taking up the work. A public health nurse may be a school nurse, an industrial nurse, a district nurse, an infant welfare nurse, and in small communities she may be a combination of these. They all have certain things in common, namely, that their hours of work are regular and well defined and may permit a woman in her off duty hours to live at home in an entirely different atmosphere from that of her labors, a fact of no small importance. Then again as a rule the importance of her work is appreciated by those whom she serves; she is looked up to as a friend, adviser, and educator.

It is increasingly difficult to get desirable graduates to return to hospitals as head nurses, a fact to be deplored, for we need the best of them as practical instructors to the pupils in training. It is probable that the long hours and the inability to live independent home lives have much to do with it. These conditions can be remedied as there seems to me no reason why most head nurses could not live outside of the hospital. Those few who for good reason must be on call should be provided with ample well-furnished living rooms.

More and more, hospitals are caring for the wealthy as well as the poor and although the well-to-do find it more difficult in some localities to get hospital accommodations, there is a growing tendency to provide for their needs.

It does not seem to me likely that our better trained nurses will again be available to the same extent as formerly for private duty for chronic cases and minor illnesses, and who can blame them? The necessary care for these cases can be given by trained attendants. Then, also, there is not the same helplessness in the home as formerly when sickness occurs, thanks to Red Cross Home Nursing courses. Hourly nursing will help to supplement the work mothers thus trained can do.

If attendants are to be trained to help with private nursing and work in special hospitals their status should be clearly defined. At present they not infrequently pass themselves off as trained nurses; if this is allowed to continue it will tend to discourage women from taking three-year training courses. This state of affairs should be remedied if compulsory registration laws were generally enacted establishing clearly the two kinds of service so that the public would know exactly what to ask for and what to expect when applying to registries for nurses and attendants.

The prospect of having enough nurses for our future needs does not seem to me discouraging. It merely means that we must adjust ourselves to changing conditions and not try to retard progress. Women are naturally attracted to nursing, but because there are so many other fields for them to choose from will not select this profession unless they have as

good a prospect to live as happily in it as in other work.

It seems to me that we, as physicians, have a particular responsibility in the matter. We know the kind of women we need as nurses and we can do much to make this clear to the public generally.

If, as seems to me, we badly need large numbers of well educated women in the nursing field we can do much to help get them, not by criticizing those we have but by helping them to place our schools on a better educational basis. This we can do by showing the public, who are to be benefited by an adequate supply of nurses, that their part is to supply the necessary funds for the support of the training schools.

DISCUSSION.

Dr. F. A. Washburn, Boston: I can add very little to Dr. Howland's excellent and very complete paper. Perhaps I can emphasize a few points, however. I would like to say first of all that the country is now prosperous. Times are good. Dr. H. B. Howard used to bring out this point to me a good many times,—that when we have bad times, they were good times to run a hospital. In other words, you had plenty of candidates for your training school. In times of prosperity there are so many other avenues of employment open to women and every class of people who work in hospitals that the supply is limited. This matter of good times will rectify itself. Some say soon and some later, but hard times are sure to come, and when they do come, I for one look for a very marked increase in the number of applicants for our training schools. The question really divides itself into two parts. The first part is the scarcity of applicants for our training schools, and the second is the scarcity of women who go into private practice. That is, the small proportion of our graduate nurses who go into private practice. It is an undoubted fact that some hospitals have exploited nurses. Some of the small hospitals and some of the large ones have not given a *quid pro quo*. In other words, they have not given a complete training. They have secured their nursing at reduced rates, and have not given the equivalent in training. The nurses are awake to that, and as Dr. Howland pointed out, they look up the qualifications of a school pretty carefully before making a choice. Those hospitals are just trying to get something for nothing, and they must change their methods. If they cannot change to better methods, hire more competent instructors, and make a real school by utilizing their own hospital and by affiliation, they cannot give the proper equivalent to a nurse and they will have to get their nursing in some other way. What will that other way be? I can see only one thing for them to do aside from closing their doors, and that is to hire enough graduate nurses and to have a school for attendants. I don't mean by that that they should do their nursing of acute cases by attendants, but that they should go to the expense of hiring enough graduate nurses so that the nursing is done by competent women, and so that they can train attendants. Then let us have a compulsory registration law, which we absolutely need in this state. Thus they can train and produce women who will be of great use in the community.

The other side of the question, the second part, is, what can we do to increase the proportion of women who go into private nursing? As Dr. Howland pointed out, the opportunities for a trained nurse are very much greater today than they were a few years ago, infinitely greater than ten or fifteen years ago. The public health field has recently been opened, as you know. That has taken a large number of nurses from the private nursing field. The industrial nursing,—you know how many of our corporations have nurses on their payrolls,—the district nursing, and other lines of nursing are very much more attractive to an intelligent, educated woman because she is mistress of her own time, she can live in her own home, she has certain specified hours of work and she can live with her family. Now you must compete with that condition. It is here to stay, and how are you going to meet it? Taking care of the sick in the private home is the woman's natural function, and if the conditions are made as attractive as can be, trained nurses will consider them more favorably. In the first place, we can all do something to make a nurse's career attractive. How many of you men here would recommend your own daughters to be private nurses? If that question was asked you by your daughter would you back her up in doing it? If not, then let us put nursing where you will approve of it as a career for your daughter. Now that means the consideration of the nurse by the doctor. Usually she gets pretty good consideration from the doctor on the case. She does not always get it from the family, however, but the doctor can see to to it that she does get it from the family. Nine times out of ten what he says and the way he insists upon the woman being treated carries great weight and will settle the question. The private nurse will probably never in the future be in such large numbers that she can be at the beck and call of those with sufficient money to have her come on cases where her skill is not really needed. You do not need a trained nurse to care for a senile man or woman. An attendant can do that perfectly well. If you want some nursing supervision you can have your district nurse go in and supervise. You do not need a trained

nurse for the various illnesses of infancy. In that way you will utilize the skill you have in the field to the best advantage. I think if we pay more attention to all these little points and many others, there will be an improvement in present conditions in the nursing situation.

DR. W. P. BOWERS, Clinton: The last paper and subsequent speaker have dwelt upon the importance of providing for the registration of attendants. It may interest the audience to know that a bill designed for that purpose was sent to the legislature last winter, but it was defeated by reason of the opposition of the State Department of Mental Diseases. The Board of Registration of Nurses had previously defined certain regulations which training schools for nurses must live up to. These requirements were opposed by the Department of Mental Diseases, so that if any other effort is to be made along these lines, it will be necessary for you to overcome that feeling of suspicion which causes opposition from the Department of Mental Diseases. At the present time the people who proposed these measures do not understand the reason for this opposition. So far as it can be determined, it will have no bad effect upon the activity of training schools for nurses in state institutions, but the fact remains that there is a very active, definite, organized opposition to the training of attendants by the State Department of Mental Diseases in Massachusetts.

Original Articles.

AN HISTORICAL NOTE ON THE RELATIONSHIP OF DIGESTIVE DISTURBANCES AND PSYCHOSES.*

BY CHARLES GREENE CUMSTON, M.D.,
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THROUGHOUT the history of the healing art observers—and not the least in reputation—refer to the frequent coincidence of neuropathic states with various digestive disturbances, and this remark does not apply to physicians alone, because Homer, Aristophanes and Democritus mention in their writings the influence exercised by the stomach over the cerebrum. Hippocrates clearly indicates the relation of mania to gastric irritation when he says: "Vomiting with restlessness, a low pitched voice and fixed gaze are the signs announcing the advent of mania," and he opines in the belief that gastric disturbances, likewise those of the intestine, often create hypochondria and insanity. "Those tormented by atrabile fall ill whenever the blood is surpassed by the bile and pituita; they then lose consciousness and become maniacs." Hippocrates' treatment of melancholia was by purging and travel—*navigare Anticyras.*

During the latter part of the first century A.D. and commencement of the second, Aretaeus of Cappadocia adopted the doctrine of morbid sympathy in its entirety. He regarded the stomach, or more correctly speaking *the cardia,* as "being expressly situated in the neighborhood of the heart, that it may give it proper tonus, spirits or weakness, from the influence that it possesses over the soul and this is its principal quality." Melancholia he believed to be engendered by "atrabile rescending of the cardia," and he goes on to say: "Melancholia does not suddenly disturb the intellectual faculties; the patients are mournful (sad), they are struck by consternation; the digestion becomes labored; they (the patients) are afflicted with flatulency, foetid eructations exhaling the odor of fish. Occasionally lurid paroxysms of fury succeed their sorrows. The distress of their mind is fixed and inherent to the same idea. . . . . At a more advanced phase they complain of a thousand trifles and long for death. The habit of their body loses all human dignity; their skin imperceptibly assumes a dirty hue, with which a black and green tint is mingled. . . . . They have ill smelling eructations. The arterial beats are small, miserable (in quality) and frequent." This is a classic description of the tachycardia met with in dyspeptic subjects. As to treatment, Aretaeus prescribes the same drug so lavishly prescribed by some today for the same clinical phenomena, namely, aloes: *"Benefacit et aloe, namque ipsa ad inferius intestinum bilem deducit."*

Soranos (usually incorrectly written Soranus) of Ephesus, whose doctrines have been handed down to us in the writings of Caelius Aurelianus in about the year 190 A.D.,† and who lived in Rome at about the same epoch as did Aretaeus, namely, during the reign of Nero, has left us a very exact clinical description of melancholia. Diocles, who lived before Galen, regarded the stomach as the site of hypochondria.

* Abstract of the opening lecture delivered to the winter course (1919-1920) at the University of Geneva.

† Rheinesius supposed that Caelius Aurelianus lived in the V Century, but there are no convincing proofs put forward to substantiate this supposition.

Cornelius Celsus, who wrote about the year 40 A.D., refers to a type of insanity characterized by sadness and which he advises being treated by diet of a light nature and purging with black hellebore. He occasionally resorted to the use of emetics and had the patient rubbed twice a day, this being a common practice of the day.

Galen (131-210 A.D.) describes the symptoms of hypochondria and refers to several individuals with gastric disturbances and marked involvement of the cerebral functions and he unqualifiedly places the starting point of the brain disorder in the stomach and lower abdomen. *"Ventris torpor omnium confusio. Oribus alius a ventriculo morbus, qui ab aliis melancholicus, ab aliis flatuosus nominatur."*

Galen thought that the so-called hypochondriacal affections with flatulency were characterized by paroxysms of melancholy, and he therefore prescribed a succulent diet if the humor had not remained too long in the stomach and was easily eliminated; otherwise if the effects on the brain had been of some standing and if the affection progressed, he had recourse to violent purgative drugs. Upon one occasion, having the professional care of a young grammarian whose overtaxed mental powers inclined to convulsive seizures, he advised the use of all means that might set the digestive apparatus aright, while in the case of an epileptic child he successfully proscribed the ingestion of foods tending to produce flatulency as well as those which bring the blood to the head.

In his commentaries on Galen's writings, Vallesius expresses himself as follows: "By paying attention to the hypochondriac regions and belly, headache can be avoided," and Oreibasios, of Pergamos, in the fourth century, the compiler and commentator of Galen, follows the latter's doctrine and treatment of melancholia.

Aetios of Amida, in Mesopotamia, who lived at the latter part of the fifth and commencement of the sixth centuries, translated into Latin and commented the writings of Rhuphos, of Ephesus,† as did Oreibasios before him. The ideas of Aetios on the subject of melancholia are quite those of Hippocrates and Galen. He insists upon the cutaneous eruptions which indicate that the humors and juices of the body are corrupted; in his manner of thinking at the present time our clinical and laboratory men would say that the process is one of autointoxication pure and simple. Consequently, our confrère of Amida was ahead of Professor Bouchard by some fifteen hundred years, not forgetting the modern school of dermatology.

In the sixth century Alexandros of Tralles continued Galen's doctrines and described several types of melancholia. He looked upon migraine as a response of the brain to the gastric disturbances and gave preference to Armenian stone over the white hellebore recommended by Hippocrates as he considered that the former was a more powerful purgative although devoid of danger. Alexandros was not a partisan of drugs possessing violent action. It is interesting to note that white hellebore was returned to favor by Asklepiodotos about the commencement of the year 500 A.D., but it fell again into discredit.

Paulos, of Egina, in the seventh century, and Rhazes, in the eighth, merely commented upon the ancient ideas of Rhuphos, Hippocrates and Galen in respect to melancholia and attributed this morbid mental process to a thick humor similar to atrabile and which is contained in the inflamed stomach. In the twelfth century, Actuarius attributed a highly important part to animal spirits in relation to digestion and phenomena of the soul, thus supposing an evident connection between the two processes.

During the following centuries practically nothing is to be found regarding neuropathic states and gastric disorders. The Arabs were the servile copyists of Galen, likewise of Aristotle, so that several centuries elapse without giving rise to anything medical worthy of note, excepting the School of Salerno, where the writings of Hippocrates, Galen, Aetios, Oreibasios, and other ancient works were read and explained by the professors.

Then the fifteenth century came and the Renaissance, when a resurrection of science in general, and medicine in particular, took place, but unfortunately the influence of occult sciences soon became felt and the best minds of the times,—Paracelsus, Wier, Van Helmont,—were more or less given up to alchemy and endeavored to explain pathological phenomena by means of this obscure science.

At about the same epoch the illustrious Fernel, of Clermont in Beauvois, laid great stress upon the signs offered in humoral changes in his work which was the classic *par excellence* of the sixteenth century. He admitted that hypochondria resulted from hepatic and gastric mor-

† Usually styled Rufus of Ephesus.

bid processes, and says: "*Vapor ater et obscurus obrepit in mentem . . . . laesa ventriculi concoctione.*"

According to Van Helmont (1577-1644) the Archaeus,—the supreme and immaterial power,—was seated in the stomach, for he writes: "*Spectatur nempe major authoritas stomachi in caput, quam capitis in stomacho. . . . . Unam in homine esse animam in stomacho tanquam loco suo.* Drowsiness, delirium, insomnia, and many other symptoms that were supposed to be cerebral in origin are neither ameliorated nor cured by drugs having an action on the brain or by applications to the head, but rather by stomachic remedies.

The constant function of the stomach and the necessity for the entire organism that it should be perfect is for Paolo Zacchias (1584-1659) the reason why this viscus is the first to reveal any morbid condition arising in it, by such symptoms as flatulency, poor digestion, etc., and he also believed that hypochondriacal affections were principally located in the stomach. Zacutus Lusitanus (1575-1642) supposed that hypochondria was due to a coldness of the stomach, while the great Leyden clinician, Franciscus de le Boë or Silvius Deleboë, as he is also known (1614-1672), admitted that the gases and vitiated humors that are encountered in hypochondriacs act as poisons on the nervous system, and consequently the psychic functions become disturbed.

Daniel Sennert (1627) attributes a large part to the liver and stomach in the origin of melancholia, thus: "*Melancholia hypochondriaca appellatur, quod ex hypochondriis ortum habeat.* He also says: "In such cases a thick blood, similar to atrabile, is contained in the inflamed portion of the stomach from whence vapors ascend to the brain and pervert its functions." Stahl, in his work entitled *De vena portae, porta malorum, 1698*, naturally considers hypochondria as a consequence of some disturbance in the portal circulation, while G. Marcencius (1645) incriminated the stomach and liver when these organs were obstructed in their functions.

It would appear that the English anatomist, Highmore (1670), first discovered gastric dilatation, because he speaks of a relaxation of the fibers of the organ and he also states that in melancholic subjects there is a heavy slimy phlegm in the stomach which becomes acid and sour and engenders a too subtile blood. F. Hoffmann, of Halle (1660-1742), taught that hypochondria is the outcome of lack of tonus of the peristaltic movements of the stomach and intestines, and a contemporary physician of no mean repute, Schatcht by name, describes two types of melancholia, one nervous, the other atrabiliary in nature, which in modern medical parlance would simply be hepatic congestion, perhaps infection from the intestinal canal.

The great Boerhaave (1668-1738) attributed melancholia to a gluey, greasy matter obstructing the vessels of the hypochondrium, while Manget, of Geneva, a physician of no mean parts, regarded this mental process as due to an atrabiliary humor present in the spleen and pancreas. Lange gave a large place to ferments in the production of melancholia, but like his contemporary, Sydenham, and numerous other writers of the day, he appears to have confounded these mental processes with hysteria. The diet ordered for epilepties one hundred and fifty years ago by Tissot, of Lausanne, differs very little from that given today in cases of dyspepsia resulting from fermentative processes, and it is notable that he advises a milk diet, although Cheyne (1733) had done so before him. The latter observer believes that melancholia results from obstruction of various viscera, particularly the hepatic gland. Cullen (1712-1790) noted that all subjects with melancholia (hypochondria) are at the same time afflicted by some gastric disturbance and advised a very strict diet when a maniacal stage was being reached. Vieussens (1641-1720) and Bordeu (1722-1776), the latter to my mind one of the greatest clinicians of the eighteenth century, refer to the intimate relationship existing between the gastric symptoms complained of by hypochondriacal patients and in psychic manifestations of this mental process. The Scottish physician, Whytt (1714-1766), himself a decided neurasthenic and constipated subject, remarks that when the stomach and intestine contain gas or some other nefarious humor, they affect the brain to such an extent that the subject loses his mental faculties.

Many other writers could be quoted bearing upon the subject of this lecture, but I shall conclude by giving the opinion of some of the great alienists of the epoch, the most weighty of which is Esquirol (1772-1840) and his student, Bayle. The former believed that certain types of melancholia were due to a displacement of the transverse colon, while Bayle mentions certain cerebral disorders secondary to enteritis and

gastroenteritis. Beau maintained that there was no idiopathic melancholia and the types which appeared to be the least symptomatic invariably resulted from some gastric disturbance. The great Chomel wrote: "*Quand je vois un malade en proie au délire je suis entraîné à en chercher la cause dans les organes éloignés, avant de la demander au cerveau,*" while according to Gall's teachings, curable cases of insanity are digestive in origin, the incurable cases having a cerebral origin.

That great master of mental pathology, Philippe Pinel, placed the primary seat of insanity in the stomach and intestines and supposed that the disturbances of the mind originated from these centers and that by a reflex action the liver provoked melancholia. The Germans of the epoch added nothing to the subject, their theories were vague and based upon the writings of the French school, so that the last observer whom I shall quote is Broussais (1772-1838), the distinguished professor of Montpellier, who remarks that moral factors do not produce insanity until they have first caused some gastric inflammatory process, "*Comme si l'encephale avait besoin, chez certains sujets, de la réaction des viscères pour arriver à un haut dégré d'irritation.*" It is therefore evident that Broussais regarded melancholia as the consequence of a gastroenteritis reacting on a predisposed brain. And finally we come to Beard, of New York, who first described neurasthenia and recognized cerebral, spinal, sexual, and gastric exhaustion as its etiological factors, and from his time (1880) on the names of those who have added to the knowledge of the relationship of gastric and intestinal affections to the psychoses is legion.

THE EARLY ORTHOPEDIC TREATMENT OF INFANTILE PARALYSIS.

By Arthur T. Legg, M.D., Boston.

Infantile Paralysis, with its high mortality and terrible deformities, is again engaging the public attention on account of the present outbreak in Massachusetts. As a natural sequence many questions as to orthopedic treatment and its probable results are addressed to the medical profession.

It, therefore, seems a fitting time to describe the methods of treatment which have been found successful in caring for the victims of the 1916 epidemic and to emphasize the principles brought out by a careful study of the progress of more than one thousand cases.

It has been my privilege, since November, 1916, to conduct the clinics in the after treatment of infantile paralysis held by the Harvard Infantile Paralysis Commission, and I shall try to describe our methods of examination and treatment as representing what we have found to produce the best final results for these unfortunates.

According to many, orthopedic treatment should begin at the end of the tenderness or the sensitive stage. In my opinion it should begin as soon as the acute cerebral and febrile symptoms have subsided, for even at this stage the unequal recovery of opposing groups of muscles may cause a contracture of the stronger group; and markedly sensitive cases may need to be protected by plaster or splints.

No active therapeutic measure should be started until the sensitive stage has entirely subsided; but during this stage protective treatment, as a bi-valved plaster cast or light wire splints, applied to a sensitive joint in the normal position is advisable to insure perfect rest and prevent beginning deformity.

It has been our custom during this stage to give the patient hot saline baths. These seem to be very efficacious in the treatment of the sensitiveness.

This stage of sensitiveness varies considerably, but may last from a few days to a few months. Some cases show no sensitiveness whatever, while others are extremely sensitive. Any massage or manipulation, while it is sensitive prolongs it.

The question as to when we shall allow these cases to sit up arises early in the treatment. It is the desire of all parents to get the child up as soon as possible, and they will prop it up in a chair, before there is a sign of recovery unless they are warned of the dangers of this procedure. This is one of the greatest causative factors in deformity. The foot, hanging in the equinus position, favors a contraction of the gastrocnemius; the flexed position of the knees favors contraction of the hamstrings, and the flexion of the thighs at the hip, favors the flexion deformity where there is weakness of the hip extensors. The sitting position also favors deformity of the spine of there is weakness of the trunk muscles.

It is not my contention that patients should be kept in the recumbent position indefinitely,

but I believe that they should be kept recumbent for two or three months at least, whenever there is considerable involvement, only allowing them to sit up for very short periods for a change in position, and then only when they can be constantly watched for any evidence of deformity.

Again, if allowed, the parents will encourage walking, even if the child is barely able to stand, honestly believing that this will aid in the return of power, and, before the experience of the recent epidemics, we all believed the same. In allowing this the already weakened muscles are given the body weight to support and become stretched, causing deformity, and from overwork become weaker than they were before. Walking, therefore, should not be allowed, unaided, until the muscles have regained power enough to perform their functions properly.

The problem of muscle fatigue is a very important one, and one of the hardest to prevent. We all know it is next to impossible to restrict the activities of a previously strenuous child, especially in a case where only slight impairment has occurred, but it is in just this type of case where unrestricted activity may do the greatest harm from stretching caused by fatigue. Given an only slightly weakened gastrocnemius, unrestricted walking will cause weakening from fatigue, followed by stretching, in practically all cases, and may result in an ultimate calcaneous deformity.

It will thus be seen that it is of the utmost importance to guard against fatigue from overuse, by making frequent examinations, and we have seen it proved while watching the cases of the 1916 epidemic, that it is the patients that have been most restricted in activity who show the greatest improvement.

Before beginning any scientific treatment a most careful and thorough examination of the muscles should be made. It is our method to go over the entire body, charting the relative strength as to whether they are normal, good, fair, poor, trace, or gone.

By "normal" is meant that the muscle can perform a normal strength test, as for example, a normal quadriceps can lift the body weight from the crouching position. By "good" we term a muscle that cannot come up to this normal test, but can overcome resistance. By "fair" we term a muscle that cannot overcome resistance, but can overcome gravity. By "poor" we term a muscle that cannot overcome gravity, but can perform its function by removing gravity. By "trace" we term a muscle that cannot perform any function, but may be felt to show some contraction, and by "gone," one in which no contraction can be felt.

These tests cannot, of course, be made on all muscle groups, and in infants the more accurate tests cannot be made at all. Here the child is placed in different positions, and the voluntary movements watched, or the different muscle groups are stimulated reflexly. Where the child is old enough to aid in the examination the actual strength of the muscle groups is taken by the spring balance test. These are also charted.

It may be seen that after an examination of this kind a very accurate knowledge of the musculature of the entire body is obtained, and that intelligent treatment may now be prescribed.

From these charts the exercises for the muscle training are laid out. Where it is possible the children are brought to the hospital two or three times a week to be given massage and muscle training by a skilled worker, and the mothers instructed in this, so the child may have treatment daily.

Since 1916, clinics have been held about the state and treatment prescribed. A field worker has been left in the district to visit the homes and instruct the mothers in the treatment. As is easily seen, this cannot be as satisfactory as where they can be brought to the hospital frequently.

Subsequent complete examinations are made every three months, and treatment changed, as the case demands.

The problems which we meet in the treatment of these cases are many. The first to arise is that of deformity, caused by contracture of one group when the opposing group is paralyzed or weakened. This, as I mentioned before, may start very early, and is especially true of equinus deformity where the child, with lower leg involvement, naturally lies in bed with toe drop, and the gastrocnemius recovering and contracting early, causes the permanent equinus deformity. The hamstrings usually recover before the quadriceps, which causes the flexed knee deformity. Both these deformities may be easily prevented by the application of plasters or, if seen early, by stretching. The flexion deformity of the hip is caused by allow-

ing the child to sit up or crawl where there are good hip flexors with involvement of the hip extensors. This may be prevented by keeping the child prone, or by constant stretching at its beginning. Where permanent flexion is present the child stands with markedly increased lumbar lordosis. If the deformity is of long standing, operation is the only curative measure.

The paralytic scoliosis may be combatted where the case is seen early, by corset, or jacket. Probably the most difficult deformity to treat is that occurring at the shoulder from paralysis of the deltoid. Where the pectoralis major is not involved, its contraction will pull the head of the humerus forward, and the arm, hanging at the side, stretches the capsule, causing subluxation. For this we use the platform splint, which holds ,the head in the glenoid, with the arm in the horizontal position.

This brings us to the questions as to when we shall apply braces. Braces should be applied for only two reasons, (1) to prevent deformity, and (2) to allow locomotion.

To prevent a child from walking for an indefinite period of time is, of course, undesirable, and to allow him to walk in a deformed position is equally undesirable. Braces, therefore, have their place in cases where we know deformity will take place if walking is allowed without support, and long inactivity is undesirable; and in cases where there is extreme involvement of one or both legs and it is desirable to get the child about for the benefit of his general condition, and also to allow muscle groups not badly involved to get active exercise. It must always be remembered that braces favor muscular atrophy, and should be worn only when performing that function for which they are applied.

Our chief asset in bringing back to power those muscles paralyzed, and strengthening those weakened, is massage and muscle training; by massage we seek to stimulate the circulation in the muscle, and by muscle training to strengthen an involved muscle by making it perform its exact function.

Muscle training, if supervised by unskilled assistants, may do great harm, for a child will inevitably use the strong muscle in performing a movement, rather than the weak. Thus the strong muscle will increase in strength and the weak one will become weaker, with the consequent overbalance and deformity. Thus without a complete knowledge of functional anatomy an assistant is useless.

So in this muscle training the weaker muscles are made to perform their exact function, that they may gain rather than the stronger, so that the normal balance may be reëstablished. Massage and muscle training may cause fatigue and weakening, if overdone, as in over activity. Therefore, while muscle training is our best method for regaining power in weakened muscles, it must be supervised by a very skilled person.

Prognosis. Every parent will ask, during the convalescent stage, as to what will be the outcome. If we are honest we must admit that we can tell but very little. As to the outcome of muscles completely paralyzed we can say absolutely nothing. Where there is some power, we may say truthfully that there will be gain in power under skilled treatment. How much this will be it is impossible to say.

Summary. During the sensitive stage the patient should be at perfect rest.

No active treatment should be started until tenderness has entirely disappeared.

All beginning deformities should be corrected as soon as they appear.

An accurate muscle examination of the entire body should be made before starting any treatment.

Sitting and walking should be prohibited for two or three months at least, and then allowed only when the patient can be kept in a normal position.

Braces should be applied, (1) to prevent deformity; (2) to allow locomotion.

Fatigue must be constantly guarded against.

Massage and muscle training is our best method to reëstablish power.

New Instrument.

A FOUR-WAY STOP-COCK.

By G. T. Tyler, M.D., Greenville, S. C.

Some years ago I devised a four-way stop-cock which, by connecting donor, recipient, and citrate solution with a syringe, might make direct transfusion easier to accomplish. Experiments made by Dr. E. H. Risley with this instrument were unsuccessful because of the necessary stasis of blood in the tube attached to

the donor while the citrate was being added, or the blood was being injected into the recipient. Clotting resulted in this tube. While such efforts are now unnecessary, it has occurred to me that the cock might be of service in other clinical or physiological work: hence the description.

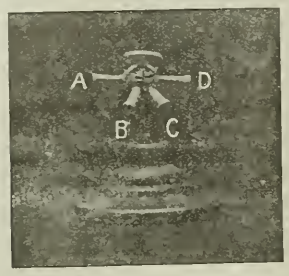

FIG. 1.—Stop-cock on detachable tripod.

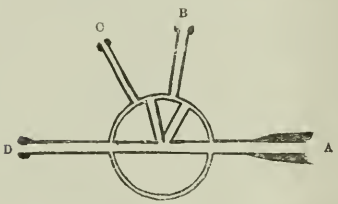

FIG. 2.—Diagram of stop-cock.

FIG. 3.—Apparatus complete with Bernheim cannulas. (To show manner in which it was originally intended to use the stop-cock.)

Illustration 1 shows the stop-cock held on a stand by a wire claw. Illustration 2 is a diagram of the instrument. The thumb-screw turns from D to B. In Illustration 1 the canals A and D are connected. Turn the screw to C: C and A are open. Turn it to B: B and A are open.

In the injection of more than one fluid, the flasks are connected with B, C and D. Any fluid can be injected at will by simply turning the thumb-screw. Or, from a flask or syringe attached to A, the same fluid can be injected almost simultaneously into three animals.

The larger rim at A, intended to attach a syringe, can easily be reduced if desired, to the size of the other openings. This, however, is not necessary for the ordinary rubber tube.

Book Review.

The American Red Cross in the Great War. By HENRY P. DAVISON. New York: The Macmillan Company. 1920.

The account of the work of the American Red Cross in the Great War given in this volume by Mr. Davison, Chairman of the War Council of the American Red Cross, is one of the most interesting and comprehensive of the reviews of America's war work in different fields. This book describes the efforts and achievements of the Red Cross in the war from the first beginnings of its service in organization, conscription of funds, enlistment of personnel, and the gathering together of supplies, to the end of the war and the transfer of Red Cross interests to peace activities. From the work in this country in military service and in caring for the civilian needs of families of departed soldiers through the Home Service Section, the Red Cross extended its efforts to foreign countries, among our own men and among the people of France, Belgium, Russia, Rumania, Serbia, and Italy. The total revenues of the Red Cross National Headquarters and Chapters for the twenty months ending February 28, 1919, amounted to $400,178,000, and its total expenditures during that time were $272,676,000. Scarcely second in importance to the activities of the Red Cross during the war, and not less difficult, are the efforts which have been made through the League of the Red Cross Societies to solve some of the reconstruction problems which have arisen as a result of the war, and to formulate and develop plans for coördination and mutual support among the nations of the world in working for the betterment of public health and an improvement of social and economic conditions in times of peace. As the American Red Cross still lives and has before it duties and possibilities of human service as vital as those with which it dealt in time of war, this book should be of interest to all of the thirty million Americans who were enrolled as members of the organization at the end of the war.

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THE PASSING OF THE SEPTIC HAND.

When one considers the inestimable importance of the human hand in performing the work of the world, it is somewhat surprising how long an intensive study of its infections, and the correct operative treatment was delayed. It was not until the work of Kanavel in this country, that the subject received the serious attention which it deserved. Before this era, almost anybody was considered competent to treat and operate upon a bad septic hand, though a simple operation for acute appendicitis called for definite surgical skill; the fact being that a careful and well-planned operation to save the hand is much the more difficult.

It is a cause for congratulation that during the past few years the patient with a serious septic hand is rarely seen in the surgical outpatient clinics of our large hospitals.

There are two reasons for this fortunate fact. First, the general public are better educated to the importance of attention to septic troubles of the fingers, and minor cuts and scratches.

It is a common occurrence at the present time for people to seek relief for these troubles at the hand of the surgeon, as the patient says, "I was afraid I might have a badly infected finger or hand unless I had it fixed properly at first."

The other reason for the great lessening of these cases, is the improvement of operative procedures for the relief of the less serious septic conditions; careful thought and reasoning as to the best methods of treating the different types of infection, superficial sepsis, superficial felons, teno-synovitis, and the like.

It is indeed no small triumph that these unfortunate results of ill-advised treatment, which sometimes cripple the wage-earner most grievously, or render him a charge to his family are at present so comparatively rare.

WARNING AGAINST ORANGE BEVERAGES FOR MEDICINAL PURPOSES.

A recent issue of the *Public Health Reports* has called attention to the fact that in some instances mothers, by the labels and other advertisements, are feeding "fake" orange beverages to their children under the impression that they are giving them the orange juice recommended by their physicians. It has been stated by the Bureau of Chemistry that in most cases these beverages are nothing but sweetened carborated water, flavored with a little oil from the peel of the orange, and artificially colored; as a rule these preparations are of no medicinal value, because they do not contain the organic acids and the vitamines which are contained in real orange juice. Manufacturers of these spurious orange beverages often seek to deceive the purchaser by means of suggestive statements and pictures prominently displayed to attract instant attention, while, to escape prosecution for direct violation of the food and drugs act, they print other statements correcting the misleading features in inconspicuous places. It has been ruled by the Bureau of Chemistry, therefore, that the terms, "ade," "squash," "punch," "crush," and "smash," when used in conjunction with the name of a fruit, can be applied correctly only to beverages which contain the edible portion of the fruit or juice of the fruit named.

In order to prevent mothers from being misled by deceptive labels and advertisements, it has been suggested that physicians in recommending orange juice for children, warn the mothers against the substitutes of the beverages for the juice of real fruit.

MEDICAL NOTES.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—At the recent Cardiff meeting of the British Association, the American Association for the Advancement of Science was represented by Dr. S. I. Franz, of George Washington University and the Government Hospital for the Insane. A resolution was passed by the General Committee to the effect that national associations for the advancement of science shall in future be invited to send representatives to meetings of the British Association.

APPOINTMENT OF DR. CHARLES E. SIMON.—Dr. Charles E. Simon, professor of clinical pathology at the University of Maryland, has been appointed lecturer at the School of Hygiene and Public Health of the Johns Hopkins University. He has received an appointment also as managing editor of the *American Journal of Hygiene*.

AWARD OF THE MARY KINGSLEY MEDAL.—Announcement has been made of the award of the Mary Kingsley Medal to Professor G. B. Grassi, professor of comparative anatomy at the University of Rome, in recognition of his research work on the transmission of malaria by mosquitoes and the development of the hematozoa in the mosquito body.

APPEAL FOR FUNDS TO CONTROL TYPHUS IN POLAND.—In two recent issues of *The British Medical Journal*, comment has been made upon the appeal made by Mr. Balfour, on behalf of the Council of the League of Nations, for £250,000 with which to combat typhus fever in Poland and Galicia. Mr. Balfour has called attention to the wide prevalence of the disease at the present time in Russia and Poland and has quoted authorities to the effect that unless adequate steps are taken at once the epidemic is likely to be far more lethal in the coming winter than in the winter of 1919-20. Mr. Balfour details the reasons which make the prevention of such a disaster a matter which concerns all nationalities. In the first place, economic conditions in Poland and Galicia cannot be stabilized while the population is threatened by typhus. Secondly, if the development of typhus be not checked it may well overrun Central Europe, where every circumstance is in its favor. As infection spreads it becomes harder to deal with, and no European country can count itself wholly safe if Poland be allowed to succumb. Lastly, there is the claim of humanity; Poland is the victim of circumstances for which she is not responsible. According to the statement of the Polish Minister of Health, there were, last year, 229,821 cases of typhus in Poland and Galicia, with 19,904 deaths. In contrast with the conditions obtaining in Russia, where the enforcement of preventive measures meets with great hostility from the inhabitants, the natives of Poland are anxious to coöperate in the extinction of typhus, and have organized a Polish Red Cross Society, as well as a number of special hospitals. The commission sent to Poland by the League of Red Cross Societies has received during this year gifts or funds from the Red Cross Societies of almost every European nation, and has done useful work in coördinating the most important of the relief agencies.

The British Medical Journal states further, that although the plan of operation is complete, the organization ready, and the methods to be employed are successful and well understood, the response to the appeal issued last May was met with scant success. The body commissioned by the League of Nations with the conduct of the typhus campaign on the Russo-Polish frontier is the League of Red Cross Societies, whose headquarters are at Geneva, and the organization accredited by the League for the purpose of enlisting voluntary help within the British Empire is the Imperial War Relief Fund (Fishmongers' Hall, E.C.4), which is under the patronage of His Majesty the King and in close touch with the overseas Governments. In Canada, Australia, and New Zealand the Governors-General have published their appeal on behalf of the Imperial War Relief Fund, and a vigorous campaign is in progress. In Australia, for instance, Sir Denison Miller, Governor of the Commonwealth Bank, is acting as treasurer of the Fund, and the appeal has been given prominence throughout the press. Effective measures have also been taken in the Crown Colonies and Dependencies. In the meantime, conditions conducive to the spread of the epidemic are reported from many areas in Central Europe. In certain districts in Prussia, for example, according to authentic information just to hand, these conditions are grave. In Breslau—to name one district only—of 22,544 adults who applied to an officially recognized relief agency, 10,300 had no body linen and 3,204 had but

one chemise. Overcrowding by night and by day was rampant. Children in particular were suffering severely. Of 20,000 who applied, over 15,000 had no underclothing, more than 5,000 slept on rags, and 4,132 had no coverlet but their frocks. Eighty-six per cent. were undernourished, 41 per cent. were scrofulous, 48 per cent. tuberculous, and 72 per cent. suffered from bronchitis. Such conditions are, of course, highly favorable to the spread of epidemic, and it is for funds to remedy them, as well as to provide medical assistance and supplies, that the Imperial War Relief Fund exists.

Public Health Service Takes over Army Hospitals.—Two army hospitals, one in North Carolina and the other in New York Harbor, will be taken over by the United States Public Health Service during the present week.

The North Carolina hospital (O'Reilly Hospital), which is at Oteen, eight miles from Ashville, will be continued as a tuberculosis hospital with about 1,000 beds. Dr. W. M. Foster will be in temporary charge.

The location of the hospital is beautiful and the institution is admirably adapted to the treatment of tuberculous disease. The buildings were erected by the army for that particular purpose and are superior to most of those in base camps. Two of the wards will be remodeled; and some additional buildings will be erected for the use of the staff, especially the married staff, for whom no accommodations now exist.

The present patients will probably remain, if the hospital equipment can be taken over with them. The nurses, except those who wish to take accrued leave, will remain.

The hospital in New York, variously known as the Hoff General Hospital and the U. S. Debarkation Hospital, is at Fox Hills, about ten minutes' walk from the New York City ferry station at Stapleton, Staten Island. It will be continued as a general hospital with a capacity of about 500 beds. Dr. J. O. Cobb, recently in charge of all public health service activities in Chicago, will be in charge.

Leprosy on the Island of Rodrigues.—*The British Medical Journal* has published the following interesting review of the history of leprosy in Rodrigues, a solitary island in the Indian Ocean far to the east of Mauritius, reported through the Director of the Medical and Health Department of Mauritius:

The information gathered from the oldest inhabitants and by personal investigation leaves no doubt that leprosy was introduced into Rodrigues by a man known as "Diango," who came from Mauritius about forty or fifty years ago. This man evidently married a native of Rodrigues; he was employed as a fisherman by a family residing at Oyster Bay, a small coast settlement. Four or five years afterwards he developed leprosy. Owing to his condition he left Oyster Bay, and went to reside up the mountain about four miles away. A year or so after his departure one of the sons of his employer, who used to fish with him in the same boat, became affected with the disease, which afterwards gradually made its appearance in other families, all residents of Oyster Bay. It is believed that there are at present twenty-three cases of leprosy on the island; sixteen of the patients are descendants "direct or through marriage" of the first family affected with the disease, and at one time or another were residents of Oyster Bay. The other seven patients scattered over the island are descendants of "Diango."

BOSTON AND MASSACHUSETTS.

Massachusetts Elections to the American College of Surgeons.—The following Massachusetts physicians have been admitted to fellowship in the American College of Surgeons: Robert C. Cochrane, William P. Coues, George H. Earl, James J. Hepburn, Conrad Jacobson, Frank A. Pemberton and Louis E. Phaneuf, of Boston; Francis R. Burke, Daniel B. Reardon, Walter L. Sargent and George M. Sheahan, of Quincy; Marshall L. Alling and George A. Leahey, of Lowell; Frank A. Conlon and Fred D. McAllister, of Lawrence; Leon W. Jesserman, Framingham; George A. Moore, Brockton; William F. Lynch, Worcester; and Winford O. Wilder, Springfield.

Appointment of Dr. Charles E. Mackey.—Announcement has been made of the appointment of Dr. Charles E. Mackey as director of the health educational service in the City Health Department.

Hospital for Tuberculous Soldiers.—A new hospital being conducted at the Dutton estate in the Middlesex Fells in Malden by Dr. Charles E. Donlan, formerly chief of the Boston Infirmary hospitals at Long Island, will provide care for about one hundred tuberculous soldiers. Only men assigned by Government officials will be received at the hospital.

UNITED STATES CIVIL SERVICE EXAMINATION.

ANESTHETIST.

Receipt of Applications to Close December 7, 1920.

The United States Civil Service Commission announces an open competitive examination for anesthetist. A vacancy in Freedmen's Hospital, Washington, D. C., at $1,200 a year, plus increase granted by Congress of $20 a month, with board, and vacancies in positions requiring similar qualifications at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Freedmen's Hospital is a hospital for the treatment of colored patients.

CITIZENSHIP AND SEX.—All citizens of the United States who meet the requirements, both men and women, may enter this examination; appointing officers, however, have the legal right to specify the sex desired in requesting certification of eligibles. For the present vacancy male eligibles are desired.

SUBJECTS AND WEIGHTS.—Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated on a scale of 100: (1) Physical ability, 10; (2) Education and experience, 90.

BASIS OF RATING.—Under the second, competitors will be rated upon the sworn statements in their applications and upon corroborative evidence.

EDUCATION AND EXPERIENCE.—Applicants must have graduated from a reputable medical college and have served at least one year in a general hospital, and be experienced in administering anesthetics. If the appointee is not licensed to practice medicine in the District of Columbia, he may be required to secure such license.

AGE.—Applicants must have reached their twenty-first birthday on the date of the examination.

RETIREMENT.—Classified employees who have reached the retirement age and have served fifteen years are entitled to retirement with an annuity. The retirement age for railway mail clerks is 62 years, for mechanics and post-office clerks and carriers, 65 years; and for others, 70 years.

PHOTOGRAPHS.—Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

APPLICATIONS.—Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N. Y., New Orleans, La., Honolulu, Hawaii, Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul Minn., Seattle, Wash., San Francisco, Calif., Old Customhouse, St. Louis, Mo., Administration Building, Balboa Heights, Canal Zone, or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Applications should be properly executed, excluding the medical and county officer's certificate, and must be filed with the Civil Service Commission, Washington, D. C., prior to the hour of closing business on December 7, 1920.

NOTICES.

LOWELL INSTITUTE.—Free public lectures, "The Biology of Death," by Raymond Pearl, LL.D., Director, Department of Biometry and Vital Statistics, School of Hygiene and Public Health, Johns Hopkins University, Baltimore. The dates and subjects are as follows:

"Senescence and Death," December 1 (Wednesday).

"The Chances of Death," December 4 (Saturday).

"The Causes of Death," December 8 (Wednesday).

Correlation of Death Rates," December 11 (Saturday).

"Inheritance of Life Duration," December 15 (Wednesday).

"The Trend of Mortality and Some of its Consequences," December 18 (Saturday).

Given in Huntington Hall, 491 Boylston Street. Doors opened at 7.30 P.M., but *closed at 8 o'clock throughout each lecture.*

Tickets for the course may be secured, free of charge, by applying by mail to the curator of the Lowell Institute, 491 Boylston Street, Boston, and enclosing one stamped, addressed envelope for each ticket desired.

Other free lectures in the Lowell Institute are announced in the program, likewise to be had by sending the Curator a stamped, addressed envelope.

MASSACHUSETTS GENERAL HOSPITAL.—The first monthly noon meeting of the Out-Patient Staff will be held in the lower out-patient amphitheatre on Wednesday, November 24, at 12 noon.

PROGRAM.

1. Mouth Lesions in Their Relation to Systemic Disease. Dr. Leroy M. S. Miner.
2. The Out-Patient Convalescent Clinic. Dr. John Bryant.

Doctors, nurses and medical students cordially invited.

JOHN W. CUMMIN, M.D.,
For the Committee.

SOCIETY NOTICE.

NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held Tuesday, November 30, 3 P.M., at the State Antitoxin and Vaccine Laboratories, 375 South Street, Forest Hills.

This is an excellent opportunity to inspect one of the best biologic plants in the country.

Communications:

1. The preparation of diphtheria antitoxin, antimeningococcic, and antipneumococcic serums, of diphtheria toxin for the Schick test, and of diphtheria toxin-antitoxin mixtures, with their application in medical practice. Dr. Benjamin White, Director.

2. The testing of various biologic products. Dr. David L. Williams, Assistant Director.

3. The preparation and testing of anti-typhoid-paratyphoid vaccine, and of smallpox virus. Dr. Arthur L. Reagh, Bacteriologist.

The theories underlying the preparation and use of biologic products will be briefly discussed, and all processes involved in their preparation will be demonstrated. The technic and interpretation of the Schick test will be given.

An informal discussion of biologic products will follow, in which all members of the Society are cordially invited to participate.

BRADFORD KENT, M.D., *Secretary.*

RECENT DEATHS.

DR. BERNARD LECHERZACK BARNARD died at his home in South Boston, Oct. 28, 1920, aged 57. He was born in Russia, was a graduate of the Medical Department of Kazan, in 1883, and came to America five years later. He was a Fellow of the Massachusetts Medical Society and of the South Boston Medical Society. He is survived by five children, one of them being Mrs. M. J. Konikow.

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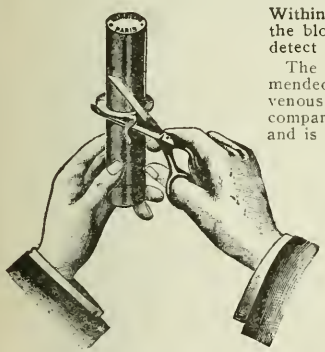

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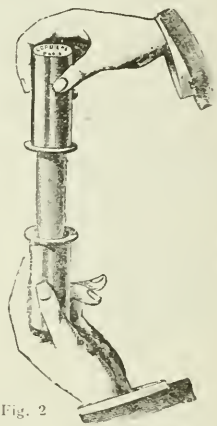

Fig. 2

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"If '606' has to be taken up and transformed **by the liver** in order to become toxic to the treponema, there is no better mode of absorption of the drug than **by way of the intestine,** since **all the veins of the intestines** join **the portal vein.** If this be the case, no route could be more indirect and unsatisfactory for active treatment than one that is not intestinal and not intravenous (i.e., prehepatic), since some of the drug must necessarily become fixed everywhere before the passage through the liver has activated it."—Dr. Sabouraud, La Clinique (13-4-1913).

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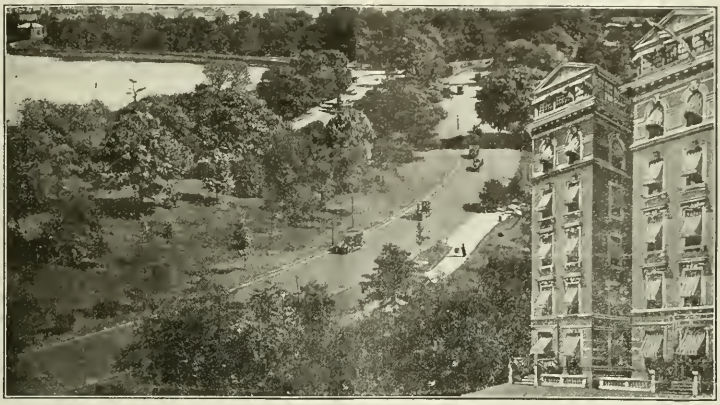

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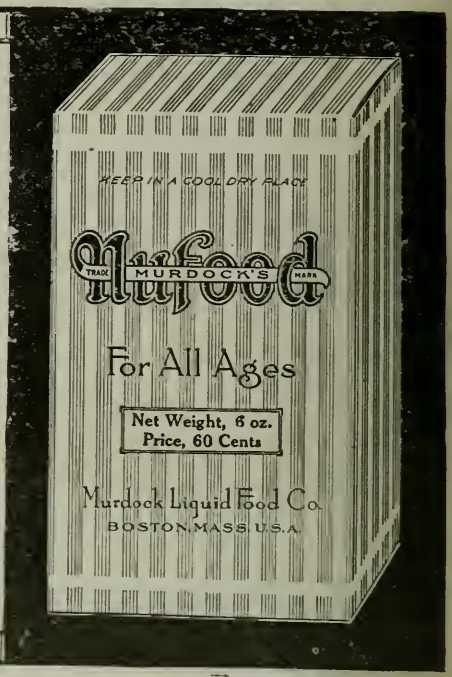

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